

# The benefits of protecting the Baltic Sea vary by country

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Reducing the eutrophication of the Baltic Sea could bring annual economic benefits of up to EUR 3.6 billion, which is more than the costs arising from reducing nutrient loading. However, the benefits vary significantly from country to country. The countries benefiting most from improved water quality should consider paying compensation for nutrient abatement measures to countries for which such measures are less beneficial, suggests a recent doctoral thesis, the public examination of which will take place on the 11th of March 2016 at the University of Helsinki Faculty of Agriculture and Forestry.

In her doctoral thesis, Researcher Heini Ahtiainen, of the Finnish Natural Resources Institute Finland (Luke), states that reduced eutrophication would bring significant [economic benefits](#) to Europe, the Baltic Sea countries, and Finland. Annually, the benefits would range from a few euros to hundreds of euros per person.

The benefits differ between [sea](#) areas and countries. In European sea areas, the economic benefits of reduced eutrophication range from EUR 5 to 210 per person per year, depending on the sea area, country and changes in the status of the marine environment. In the Baltic Sea coastal states, the benefits of achieving a good eutrophication status range from EUR 6 to 79 per person per year.

According to the research results, people appreciate clean waters. However, the willingness to pay and the factors affecting it vary from country to country. In the Baltic Sea area, the Swedes, Finns and Danish

are the most willing to pay. The willingness to pay is the lowest in Latvia, Lithuania and Russia.

According to Ahtiainen, the factors causing such variation by country include income levels, geography, the recreational use of the Baltic Sea, cultural factors, and trust in the government.

## **Maintaining water quality is important**

In Finland, the preferred course of action would be to maintain the quality of water rather than improving it. For example, Finnish summer house owners are willing to pay more for preventing the deterioration of water quality than for water quality improvements.

Based on the research findings, preventing the deterioration of water quality is regarded as particularly important.

'The results correspond to the general finding that losses are more significant to people than gains. Additionally, at present, the status of most Finnish inland waters is good,' says Ahtiainen.

Can the status of the Baltic Sea be improved through sharing the costs?

Benefit estimates are useful in deciding whether to implement nutrient abatement measures and to what extent. According to the doctoral thesis, the economic benefits of achieving a good eutrophication status in the Baltic Sea amount to EUR 3.6 billion annually, while the associated costs total EUR 2.8 billion a year.

'The results provide justification for the implementation of nutrient abatement measures in the Baltic Sea area, because the benefits of reduced eutrophication exceed the associated costs,' says Ahtiainen.

Identifying how the costs and benefits vary by country may aid in international negotiations. The countries that benefit most could pay for the implementation of nutrient abatement measures in countries that benefit less. This would mean, for example, that Sweden, Finland and Germany would pay for nutrient abatement measures in Estonia, Latvia, Lithuania and Poland.

'Citizens appreciate the good status of the Baltic Sea as a whole – their appreciation is not limited to their own coastal areas. For this reason, it would be justified that emissions are also reduced in other countries,' says the author of the thesis.

## **A price tag on water quality**

Information on the monetary benefits of reduced eutrophication is required to make the reduction of nutrient loading economically profitable and efficient.

There are no markets or price for water quality, so determining its value requires the use of economic valuation methods developed for that specific purpose. Such methods can be used to determine citizens' willingness to pay for a specific change in the status of the environment. The willingness to pay is an indicator of the benefits obtained from the change.

'Despite the challenging nature of the valuation, the importance of justifying environmental improvements also on the basis of the economic benefits they bring is increasing. Societies cannot afford to invest in environmental protection measures that have no impact,' Ahtiainen states.

**More information:** Benefits of reduced eutrophication: evidence from Finland, the Baltic Sea area and Europe for policy making.

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